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BINHAI NEW AREA, TIANJIN, CHINA

Innovative Furniture Procurement Contributing To Green Supply Chain

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Tianjin Binhai New Area successfully established a green evaluation scorecard for school furniture procurement in 2018 with the support of ICLEI East Asia. This ambitious system incorporating green supply chain management principles has won Binhai a national honour – the 2018 China Government Procurement Innovation of the Year Award.

Introduction

Binhai New Area (Binhai), situated on the eastern coast of Tianjin Municipality, is a significant reform, innovation and growth hub in Northern China. Advanced economy enables the district government to take a step ahead in improving public sector green supply chain (GSC) management by demand-side policy measures, prior to the establishment of any integrated national framework.

Recognizing Binhai’s potential in achieving green public procurement (GPP), the ICLEI-Local Governments for Sustainability East Asia Secretariat (ICLEI) invited the Binhai District Government to participate in the 10YFP Sustainable Public Procurement (SPP) Working Group 1A Project: “GPP Tender Implementation and Impact Monitoring” (hereinafter referred to as the 10YFP WG1A Project) to develop a green and innovative tender in July 2017.

The district government invests a lot in developing the education sector, including infrastructure and research aspects to attract outside talents. In 2017, Binhai built eight public school campuses, kicked off five more campus construction projects, and retrofitted 137 pre-college schools.



Facts & Figures

Tianjin Binhai New Area

Country	People's Republic of China
Land Area	~2,270 km ²
Population	2.98 Million (2017)
GDP	RMB¥713.62 Billion (2017) = US\$105.7 Billion
GDP per capita	RMB¥239469.80 (2017) = US\$35,467.55
Public Budget Expenditure	RMB¥4.86 Billion (2017) = US\$719.81 Million
Pillar Industries	Aviation & Aerospace; Petrochemical; Equipment Manufacturing; Electronic Information; Biopharmaceuticals; New Energy & Materials. Textile & Light Industry; Defense Science & Technology

10YFP on SPP WG1A Project "GPP Tender Implementation and Impact Monitoring"

Initiated by the UN Environment, the 10 Year Framework of Programmes on Sustainable Consumption and Production (10YFP on SPP) was adopted at the Rio+20 UN Conference on Sustainable Development in 2012 as a global framework that boosts international cooperation in transitioning towards sustainable consumption and production.

The 10YFP on SPP is one of the six programmes under the 10YFP that contributes explicitly to SDG target 12.7 — promote public procurement practices that are sustainable in accordance with national policies and priorities. It is a global multi-stakeholder platform, led by UN Environment, and co-led by ICLEI and the Korea Environmental Industry & Technology Institute (KEITI) to support the mainstreaming of SPP/GPP via capacity building, technical and financial assistance.

The 10YFP on SPP Working Group 1A Project, implemented by ICLEI, supported two Chinese and one Korean local government in procuring green and innovative products and forged a regional partnership on GPP from 2016 to 2018.

This vast investment entails a great demand for school furniture, making this area attractive for piloting new tender model considering the potential scale of impacts. In addition, the district government has a strong vision in “providing the next generation with the greenest facilities”. School furniture was therefore selected as the topic for the 10YFP on SPP Binhai pilot project.

Green Public Procurement in Binhai

Binhai follows common GPP processes in China, with the two nationally certified eco-labels — the *Governmental Procurement List of Environmental Labelled Products* (ELPs) and the *Governmental Procurement List of Energy Conservation Products* (ECPs) at the center of GPP implementation by public authorities at all levels. Under the procurement law, all products in the ELPs (including school furniture if listed) should be prioritized voluntarily when conducting public procurement, whereas the ECPs contain a group of typical energy-consuming products that are mandatory for compliance. Local governments merely follow the lists and, in many cases, products are not fully listed. The situation reflects how the current label-based system falls short of encouraging local authorities to take more aggressive actions beyond the basic requirements of the central government.

In spite of an imperfect national framework, the potential of GPP in driving green supply chains grasped the attention of the Tianjin Municipal Government in the early 2010s. To incentivise GSC, Tianjin released a set of ambitious policy measures to increase government acquisition of GSC products in 2014. However, little progress has been made in translating these policies into actions due to discontinued political backup at the municipal level.

Under this situation, Binhai decided to take a further step to explore solutions on encouraging GSC management via new public tender models.

Procurement Method and Green Scorecard

The majority of public procurement in Binhai is centrally supervised and administered by the Binhai Government Procurement Center. As a first step of developing a new tender model for school furniture procurement, the Center coordinated a core team consisting of representatives from all relevant departments, such as the Binhai Education and Sports Committee, and the Public Resources Trading Center, to facilitate better communication and cooperation among government officials, and took the lead to ensure a smooth implementation of GPP. ICLEI provided capacity building activities on GPP to the members of the core team.

Previous tender practice in Binhai was reviewed by the Procurement Center and ICLEI with the support of domestic partners. The most common evaluation criteria for government furniture tender were to assess the price (30%), *objective quality* – based on provided technical parameters (30%), and *subjective quality* – subjective judgement of evaluation committee members based on their experience (40%). Under this mechanism, environmental aspects, such as the ELPs and the ECPs product selections, are assessed under the objective quality criteria and represent only 4% of total evaluation scores.

The core team decided to develop a new green evaluation scorecard for school furniture. The award criteria were restructured to embrace a broader dimension of environmental performance covering the whole life cycle as in Table 1. *Environmental performance* is listed out as a separate category and represents 15% of the total assessment, which stands a significant increase from previous practice. The assessing criteria of *price* and *quality* represent 30% and 55% respectively.

In June 2018, a calling for tenders was initiated to acquire school furniture for five new public campuses at the request of the Binhai Education and Sports Committee. An open tendering document with the above scorecard was published to inform the market one month in advance.



Tianjin Binhai New Area won the 2018 China Government Procurement Innovation of the Year Award. Source: Binhai Government Procurement Center

Results

In July 2018, the bidding attracted six suppliers to apply. Two small and micro enterprises (SMEs) based in Tianjin were selected to perform the two contracts with a total value of 74,738 USD. The two contracts act as a milestone in greening Binhai and Tianjin’s supply chain practice — more environmentally friendly products will be purchased, and more suppliers will be motivated towards green production.

Table 1: 10YFP Green Scorecard for School Furniture Procurement in Binhai New Area

Category	Award Criteria	Weight
Eco-label certification	<ul style="list-style-type: none"> Product in the ELPs – 2% Product in the ECPs – 0.5% Supplier with the China Environmental Labelling Certification – 1% Supplier with other Eco-Labels – 0.5% 	4%
GPP Project Experience	<ul style="list-style-type: none"> Supplier awarded contract for supplying the ELPs products – 0.5% 	0.5%
Supply Chain	<ul style="list-style-type: none"> Supplier compliance with GSC standard (DB12/T662-2016) – 1% Supplier with third party accredited GSC system – 1% 	2%
Governance	<ul style="list-style-type: none"> Supplier with GB/T24001 or ISO14001 series environmental management system certification – 0.5% 	0.5%
Design	<ul style="list-style-type: none"> Product to be recyclable, easy handling, and easy refurbishing – 0.5% Product to be easy for maintenance, assembling and disassembling – 0.5% Product to be optimally resource efficient with eco-friendly materials; and product with overall environmental performance beyond industry average – 1% 	2%
Raw Materials	<ul style="list-style-type: none"> Product with recyclable and certified green materials, and responsibly sourced timber with FSC, CITES and/or quarantine certificate – 1% Emission compliance of product main materials – 0.4% Emission compliance of product auxiliary materials – 0.6% 	2%
Production & Processing	<ul style="list-style-type: none"> Supplier with no record of environmental violations – 0.5% Supplier with noise reduction and dust prevention measures in place – 0.5% Supplier with third party audited clean production process – 1% 	2%
Packing & Transport	<ul style="list-style-type: none"> Product with minimized use of recyclable and eco-friendly packaging materials – 0.5% Product delivered by New Energy Vehicles – 0.5% 	1%
End-of-life Treatment	<ul style="list-style-type: none"> Guaranteed end-of-life collection and disposal services by supplier – 0.5% Supplier capable of effective and eco-friendly reuse/recycle process – 0.5% 	1%
Total		15%

Quantification of GHGs Reductions from Landfill Diversion

Calculation is based on the baseline scenario that school furniture would be discarded in a landfill operating in a moderate climate without gas collection system, if no recycling service was available. The GHG equivalent savings from landfill avoiding are estimated using the US EPA LandGEM model, which is commonly reported by Chinese scholars on having relatively high degree consistence with rational numbers in real life.

Furthermore, there are additional environmental benefits along the product life cycle, if components like those in Table 1 are fully implemented, e.g. embodied carbon and energy saving in raw materials, fuel reduction in transportation, etc. Due to project scope limitation, this case report only assess benefits as below, including end of life waste reductions and greenhouse gas (GHG) emissions avoided from landfill.

- **Reduced Environmental Impacts.** Out of the 315 sets of school desk and chair procured:
 - 30 tons of furniture waste will be diverted from landfill, and GHGs equivalent to 92 tons of CO₂ is reduced due to the guaranteed end-of-life collection, renovation and reuse services;
 - 100% of packaging materials are recyclable with guaranteed collection services;
 - Formaldehyde emissions from finished products ($\leq 0.6\text{mg/L}$) are significantly lower than national emission E1 class standard ($\leq 1.5\text{mg/L}$);
- Binhai procured a total of 6,160 sets of school desk and chair in 2018. It is estimated over 564 tons of furniture waste and GHGs equivalent to 1,627 tons of CO₂ would have been avoided had the green evaluation scorecard been applied to all these tenders. This calculation is a conservative estimate as it does not include other life cycle waste aspects like recycling of packaging materials, due to project scope limitation.

This green evaluation scorecard will be institutionalized to all school furniture tenders in Binhai from 2019 onwards.

- **Increased Inclusiveness of SMEs.** The process of certifying an eco-label product can be time-consuming and costly for SMEs. The favouring of one particular label in previous tender processes has, therefore, discouraged SMEs in competing with larger enterprises on offering green products. By introducing eight new criteria on top of the existing eco-label certification, SMEs that are yet to join the ELPs and the ECPs, but have proven GSC actions in practice, are now provided with better opportunities in bidding for government contracts.
- **Empowered Public Procurers.** Environmental awareness and capacity in performing GPP in Binhai got substantially improved following the implementation of 10YFP WG1A. Procurers grew knowledge and capabilities while implementing the two school furniture tenders, and achieved satisfaction by attaching environmental implications to their routine work. This progress can be seen from Binhai's 2019 work plan in replicating the green furniture procurement success to service sourcing such as property management and cleaning.
- **Enhanced Political Support.** This groundbreaking GPP practice brought Binhai a national highest honour in public procurement at the year-end of 2018. The recognition from the China Government Procurement Journal, the official platform under the Ministry of Finance, has offered an essential boost of morale for continuing GPP work beyond 10YFP WG1A in Binhai. It has attracted full attention from the district and municipal decision makers by demonstrating the viability of initiating local solutions for GPP and gaining national endorsement. A favourable political environment for GPP is subsequently enhanced.

Lessons Learned

- **Effective communication between the procurement supervisory body and the procuring entity is the key to Binhai's success.** Before kicking off the project, the Binhai Government Procurement

Center set up regular coordination meetings to ensure inter-departmental coordination and to continuously update officials with project progresses in a timely manner. This early engagement was particularly essential for applying the scorecard with new school furniture tenders as the Binhai Education and Sports Committee was in charge of the school construction projects, while the procurement process was managed separately by the Procurement Center.

- **More attention required in informing the market of new bidding rules.** The tender documents of the two cases were announced to the market only one month before entering the tender process. Due to the short notice, some qualified suppliers were prevented from meeting new environmental requirements in their full potential. For example, none of the applications could fulfill the need for clean energy vehicle transportation. Learning from this experience, the Binhai government plans to issue a district-wide notice in 2019 to inform the market and general public fully.
- **International cooperation opens up new opportunities for GPP in China.** Binhai's achievement in GPP would have been more difficult if the district did not join the 10YFP on SPP via ICLEI in 2017. Through the project, decision makers and practitioners in Binhai benefited from capacity building opportunities and resources on GPP offered by ICLEI. The influx of new knowledge and technical assistance enabled Binhai to break the longtime standstill in procuring green products and gradually guide market transition towards sizeable purchasing power in such products.

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